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Technical analysis of the first biennial update report of the Bahamas submitted on 29 December 2022

Summary report by the team of technical experts

Summary

According to decision 2/CP.17, paragraph 41(a), Parties not included in Annex I to the Convention, consistently with their capabilities and the level of support provided for reporting, were to submit their first biennial update report by December 2014. As mandated, the least developed country Parties and small island developing States may submit biennial update reports at their discretion. This summary report presents the results of the technical analysis of the first biennial update report of the Bahamas, conducted by a team of technical experts in accordance with the modalities and procedures contained in the annex to decision 20/CP.19.

Abbreviations and acronyms

2006 IPCC Guidelines	*2006 IPCC Guidelines for National Greenhouse Gas Inventories*
AD	activity data
AFOLU	agriculture, forestry and other land use
AR	Assessment Report of the Intergovernmental Panel on Climate Change
BUR	biennial update report
CARICOM	Caribbean Community
CBB	Central Bank of the Bahamas
CCEAU	Climate Change and Environmental Advisory Unit
CCMRV Hub	Caribbean Cooperative Measurement, Reporting and Verification Hub
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2 eq	carbon dioxide equivalent
DEPP	Department of Environmental Planning and Protection of the Bahamas
EF	emission factor
ETF	enhanced transparency framework under the Paris Agreement
F-gas	fluorinated gas
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
HWP	harvested wood product
ICA	international consultation and analysis
IPCC	Intergovernmental Panel on Climate Change
IPCC good practice guidance	*Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*
IPCC good practice guidance for LULUCF	*Good Practice Guidance for Land Use, Land-Use Change and Forestry*
IPPU	industrial processes and product use
LEAP	Low Emissions Analysis Platform
LULUCF	land use, land-use change and forestry
MRV	measurement, reporting and verification
N_2O	nitrous oxide
NA	not applicable
NC	national communication
NCCC	National Climate Change Committee of the Bahamas
NDC	nationally determined contribution
NE	not estimated
NEP	National Energy Policy of the Bahamas
NIR	national inventory report
NMVOC	non-methane volatile organic compound
non-Annex I Party	Party not included in Annex I to the Convention
NO_X	nitrogen oxides
PFC	perfluorocarbon
QA/QC	quality assurance/quality control
Revised 1996 IPCC Guidelines	*Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*

SF_6	sulfur hexafluoride
TTE	team of technical experts
UNFCCC guidelines for the preparation of NCs from non-Annex I Parties	"Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention"
UNFCCC reporting guidelines on BURs	"UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention"

I. Introduction and process overview

A. Introduction

1. The process of ICA consists of two steps: a technical analysis of the submitted BUR and a facilitative sharing of views under the Subsidiary Body for Implementation, resulting in a summary report and a record respectively.

2. According to decision 2/CP.17, paragraph 41(a), non-Annex I Parties, consistently with their capabilities and the level of support provided for reporting, were to submit their first BUR by December 2014. The least developed countries and small island developing States may submit at their discretion.

3. Further, according to paragraph 58(a) of the same decision, the first round of ICA is to commence for non-Annex I Parties within six months of the submission of the Parties' first BUR. The frequency of developing country Parties' participation in subsequent rounds of ICA, depending on their respective capabilities and national circumstances, and the special flexibility for small island developing States and the least developed country Parties, will be determined by the frequency of the submission of BURs.

4. This summary report presents the results of the technical analysis of the first BUR of the Bahamas, undertaken by a TTE in accordance with the provisions on the composition, modalities and procedures of the TTE under ICA contained in the annex to decision 20/CP.19.

B. Process overview

5. In accordance with the mandate referred to in paragraph 2 above, the Bahamas submitted its first BUR on 29 December 2022 as a stand-alone update report.

6. The technical analysis of the Bahamas' BUR was conducted from 23 to 27 October 2023 in Panama City and was undertaken by the following TTE, drawn from the UNFCCC roster of experts on the basis of the criteria defined in decision 20/CP.19, annex, paragraphs 2–6: Ahmad Wafiq Aboelnasr (Egypt), Ciniro Costa Junior (Brazil), Javier Fernandez (Costa Rica), Carlos Fuller (former member of the Consultative Group of Experts from Belize), Inge G. C. Jonckheere (Belgium), Priscilla Karijodrono (Suriname), Mwangi James Kinyanjui (Kenya), Maria Jose Lopez (Belgium), Marcela Itzel Olguin-Alvarez (Mexico), Virginia Sena Cianci (member of the Consultative Group of Experts from Uruguay) and Luis Alberto de la Torre (Peru). Maria Jose Lopez and Marcela Itzel Olguin-Alvarez were the co-leads. The technical analysis was coordinated by Mirana Andriarisoa, Gopal Raj Joshi and Veronica Colerio (secretariat).

7. During the technical analysis, in addition to the written exchange, in the virtual team room, to provide technical clarifications on the information reported in the BUR, the TTE and the Bahamas engaged in consultation[1] on the identification of capacity-building needs for the preparation of BURs and participation in the ICA process. Following the technical analysis of the Bahamas' first BUR, the TTE prepared and shared a draft summary report with the Bahamas on 9 January 2025 for its review and comment. The Bahamas, in turn, provided its feedback on the draft summary report on 20 March 2025.

8. The TTE responded to and incorporated the Bahamas' comments referred to in paragraph 7 above and finalized the summary report in consultation with the Party on 21 March 2025.

[1] The consultation was conducted via videoconferencing.

II. Technical analysis of the biennial update report

A. Scope of the technical analysis

9. The scope of the technical analysis is outlined in decision 20/CP.19, annex, paragraph 15, according to which the technical analysis aims to, without engaging in a discussion on the appropriateness of the actions, increase the transparency of mitigation actions and their effects and shall entail the following:

(a) The identification of the extent to which the elements of information listed in paragraph 3(a) of the ICA modalities and guidelines (decision 2/CP.17, annex IV) have been included in the BUR of the Party concerned (see chap. II.B below);

(b) A technical analysis of the information reported in the BUR, specified in the UNFCCC reporting guidelines on BURs (decision 2/CP.17, annex III), and any additional technical information provided by the Party concerned (see chap. II.C below);

(c) The identification, in consultation with the Party concerned, of capacity-building needs related to the facilitation of reporting in accordance with the UNFCCC reporting guidelines on BURs and to participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention (see chap. II.D below).

10. The remainder of this chapter presents the results of each of the three parts of the technical analysis of the Bahamas' BUR outlined in paragraph 9 above.

B. Extent of the information reported

11. The elements of information referred to in paragraph 9(a) above include the national GHG inventory report; information on mitigation actions, including a description of such actions, an analysis of their impacts and the associated methodologies and assumptions, and information on progress in their implementation; information on domestic MRV; and information on support needed and received.

12. According to decision 20/CP.19, annex, paragraph 15(a), in undertaking the technical analysis of the submitted BUR, the TTE is to identify the extent to which the elements of information listed in paragraph 11 above have been included in the BUR of the Party concerned. The TTE considers that the reported information is partially consistent with the UNFCCC reporting guidelines on BURs. Specific details on the extent of the information reported for each of the required elements are provided in the tables included in annex I.

C. Technical analysis of the information reported

13. The technical analysis referred to in paragraph 9(b) above aims to increase the transparency of information reported by the Parties on mitigation actions and their effects, without engaging in a discussion on the appropriateness of those actions. Accordingly, the focus of the technical analysis was on the transparency of the information reported in the BUR.

14. For information reported on national GHG inventories, the technical analysis also focused on the consistency of the methods used for preparing those inventories with the appropriate methods developed by the IPCC and referred to in the UNFCCC reporting guidelines on BURs.

15. The results of the technical analysis are presented in the remainder of this chapter.

1. Information on national circumstances and institutional arrangements relevant to the preparation of national communications on a continuous basis

16. As per the scope defined in paragraph 2 of the UNFCCC reporting guidelines on BURs, the BUR should provide an update to the information contained in the most recently

submitted NC, including information on national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis. In their NCs, non-Annex I Parties report on their national circumstances following the reporting guidance contained in decision 17/CP.8, annex, paragraphs 3–5, and they could report similar information in their BUR, which is an update of their most recently submitted NC.

17. The Bahamas reported in its first BUR information on its national circumstances, including a description of national and regional development priorities, objectives and circumstances, including features of geography, climate, governance, population and economy that might affect the Party's ability to deal with mitigating and adapting to climate change, as well as information regarding national circumstances and constraints on the specific needs and concerns arising from the adverse effects of climate change and/or the impact of the implementation of response measures, as referred to in Article 4, paragraph 8, and, as appropriate, Article 4, paragraphs 9–10, of the Convention. Information was provided on the following sectors: energy, transport, water, agriculture, fisheries, industry, construction, finance, waste management, health and education.

18. In addition, the Bahamas provided a summary of relevant information regarding its national circumstances in tabular and graphical format.

19. The Bahamas transparently reported in its first BUR information on its existing institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the institutional arrangements, including the roles and responsibilities of the overall coordinating entity, the involvement of other institutions and experts, and the collection and exchange of data. The preparation of the Party's NC3 and first BUR was led by the DEPP, the UNFCCC national focal point, and the NCCC, which is chaired by the DEPP and comprises representatives of line ministries, the private sector and civil society. Consultants were engaged to compile chapters of the NC3 and first BUR. The TTE noted planned improvements to the information reported in the BUR, including on the establishment of formal working arrangements among relevant institutions for preparing NCs and BURs, adequate staffing within the DEPP and the NCCC for effectively managing and coordinating the preparation of NCs and BURs, the enhanced capacity of the NCCC to integrate climate change considerations into national socioeconomic planning processes, and technical committees to be established to support the NCCC in assessing existing policies and measures addressing climate change.

20. The Bahamas reported in its first BUR information on its domestic MRV arrangements. The Party has not yet established its MRV system, meaning that roles and responsibilities have not yet been formalized for all components. The description covers key aspects of the planned institutional arrangements, including the roles and responsibilities of the lead entity (DEPP), the roles of actors within the NCCC, regional collaboration with other CARICOM countries, legislation covering MRV, the involvement of stakeholders and the development of the Party's tool for tracking climate support. A comprehensive MRV system status assessment was performed in 2022 to provide an overview of current barriers to MRV and establish a starting point for improvement, including an initial road map. A prioritized set of recommendations for improvements therein covers areas like legal frameworks, institutional and procedural arrangements, data-collection procedures, QA/QC procedures, and information management and archiving procedures, as well as stakeholder engagement. With the process of preparing the NC3 and first BUR, the Bahamas has initiated a move from a decentralized project-based system to a centralized project-based system and, from there, to a centralized ongoing MRV system. The MRV arrangements will be established at the national level and cover four main areas: the GHG inventory system, the establishment of mitigation actions, NDC tracking, and MRV of support needed and received. The system will build on the existing systems, processes and infrastructure, rendering it cost-effective.

21. The Bahamas reported in its BUR information on its efforts in areas for improvement, such as formally establishing its MRV system and working towards a centralized ongoing system for compliance with requirements under the ETF. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

2. National greenhouse gas emissions by sources and removals by sinks

22. As indicated in table I.1, the Bahamas reported information on its GHG inventory in its BUR partially in accordance with paragraphs 3–10 of the UNFCCC reporting guidelines on BURs and paragraphs 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8.

23. The Bahamas submitted its first BUR in 2022 and the GHG inventory reported is for 2001–2018. The GHG inventory is consistent with the requirements for the reporting time frame.

24. The Bahamas referenced its NIR in its BUR. However, the Party did not submit an NIR as a separate document from the BUR or as an additional document during the technical analysis. During the technical analysis, the Party clarified that the NIR is included as chapter 3 of the BUR as well as the five annexes to the BUR relating to the estimation of GHG emissions and removals.

25. GHG emissions and removals for the BUR covering the 2001–2018 inventories were estimated using mostly tier 1 methodologies and relying on default EFs from the 2006 IPCC Guidelines.

26. Information on AD and EFs used and their sources was clearly reported in the BUR. The Party used IPCC default EFs, except for domestic wastewater treatment and discharge, for which a combination of country-specific and default factors was used. It explained the intention to move to tier 2 reporting over time on the basis of the national data improvement plan.

27. Information on the Party's total GHG emissions by gas for 2018 is outlined in table 1 in Gg CO_2 eq. It shows an increase in emissions of 23.4 per cent with land and HWP (5,077.84 Gg CO_2 eq) and 21.3 per cent without land and HWP (2,700.24 Gg CO_2 eq) since 2001.

Table 1
Greenhouse gas emissions by gas of the Bahamas for 2018

Gas	*GHG emissions (Gg CO_2 eq) including land*[a]	*% change 2001–2018*	*GHG emissions (Gg CO_2 eq) excluding land*	*% change 2001–2018*
CO_2	5 909.26	23.1	2 930.04	21.0
CH_4	327.04	30.8	324.80	29.9
N_2O	31.80	10.9	21.20	–25.9
HFCs	NE	NA	NE	NA
PFCs	NE	NA	NE	NA
SF_6	NE	NA	NE	NA
Other	NE	NA	NE	NA
Total	**6 268.10**	**23.4**	**3 276.04**	**21.3**

[a] 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, 3.D (HWP (3.D.1) and other emissions (3.D.2)).

28. Information on CO, NO_X, NMVOCs and other gases not controlled by the Montreal Protocol, such as sulfur oxides, was not reported in the Bahamas' BUR. During the technical analysis, the Party clarified that, when developing its first BUR, there were many limitations on data availability and it did not consider it an immediate priority to report on these non-mandatory aspects. The Party also gave lack of technical capacity to estimate emissions of the gases and their relative insignificance as reasons for not reporting them in the BUR. In addition, the Party stated that there are currently no procedures or policies in place at the national level that facilitate collection of data on these gases, noting the need for relevant capacity-building in order to enhance future reporting.

29. Information on F-gases was not reported in the Bahamas' BUR. During the technical analysis, the Bahamas clarified the limitations associated with its non-reporting of F-gases: it is a developing economy producing insignificant emissions, although F-gas emissions are likely to be occurring; and there was limited availability of AD for reporting on F-gases.

Further, the Party explained that, with the ratification of the Kigali Amendment to the Montreal Protocol, the Government has to put in place mechanisms for monitoring emissions of F-gases. The Party also confirmed that significant capacity-building is required to enable future reporting of F-gases.

30. The Bahamas applied notation keys in tables where numerical data were not provided. The use of notation keys was mostly consistent with the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties.

31. The TTE noted some inconsistencies in the use of notation keys in table 153 of the BUR. For example, for category 1.A.1.a electricity and heat production, where subcategory emissions were reported with values, the notation key "NO" was incorrectly reported. The TTE identified many cases where certain GHG emissions do not occur but zero was reported instead of "NA" or "NO"; for example, CO_2 emissions for category 3.A livestock should be reported as "NA", and CH_4 and N_2O emissions for category 2.D non-energy products from fuels and solvent use should be reported as "NA". During the technical analysis, the Party clarified that minor inconsistencies like these indicate a need for enhanced QA/QC procedures as part of future reporting and therefore represent a capacity-building need. With regard to categories 1.A.2.d pulp, paper and print and 1.A.2.i textile and leather, which were reported as "IE", the Party confirmed during the technical analysis that the emissions were considered to have been included with the emissions reported under category 1.A.2.m non-specified industry.

32. Comparable information addressing the tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF was not reported in the Bahamas' BUR. The TTE noted that most of the parameters, methods and assumptions used for estimating emissions and removals were not reported in the BUR. During the technical analysis, the Party clarified that its national GHG inventory included only biomass, whereas the submission of the complete table in the format indicated in annex 3A.2 to the IPCC good practice guidance for LULUCF would require all carbon pools to be considered, at least for land conversions. The TTE considers these tables to be useful for showing the parameters applied, in relation to area, wood densities, volumes, roundwood extraction and other factors, in the relevant IPCC equations, even if only biomass was included in the estimations, and that including them would increase the transparency of the methods applied when compiling the national GHG inventory.

33. Fully comparable information to the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines showing national GHG emissions and removals by category and by gas was not reported in the Bahamas' BUR. However, emissions and removals were reported together as net values. According to the sectoral reporting tables annexed to the Revised 1996 IPCC Guidelines, this is acceptable for sectoral totals, but emissions and removals should be reported separately for forest and grassland conversions (the most important key categories in the AFOLU sector for the Bahamas). During the technical analysis, the Party clarified that it will provide this information in future reporting, while considering the constraints due to its status as a small island developing State.

34. The shares of emissions that different sectors contributed to the Party's total GHG emissions excluding land (category 3.B), as reported by the Party, in 2018 are reflected in table 2.

Table 2
Shares of greenhouse gas emissions by sector of the Bahamas for 2018

Sector	*GHG emissions (Gg CO_2 eq)*	*% share*[a]	*% change 2001–2018*
Energy	2 949.58	89.8	21.1
IPPU	1.08	0.0	–71.2
AFOLU	2 993.34	NA	25.1
Livestock (category 3.A)	3.14	0.1	62.7
Land (category 3.B)	2 979.11	NA	25.3
Aggregate sources and non-CO_2 emissions sources on land (category 3.C)	11.09	0.3	–21.6

Sector	*GHG emissions (Gg CO_2 eq)*	*% share*[a]	*% change 2001–2018*
HWP and other emissions (category 3.D)	NE	NA	NA
Waste	320.31	9.8	30.6

[a] Share of total without 2006 IPCC Guidelines AFOLU category 3.B (land) and, if reported, 3.D (HWP (3.D.1) and other emissions (3.D.2)).

35. The TTE noted a minor inconsistency in the national totals for GHG emissions for 2018 calculated by gas (table 1) and calculated by sector (table 2): the total for emissions calculated by gas including land is 6,268.10 Gg CO_2 eq, while the total for emissions calculated by sector including land is 6,264.31 Gg CO_2 eq. However, this inconsistency is not present throughout the time series: for 2001, emissions both by gas and by sector were calculated at 5,077.84 Gg CO_2 eq. The TTE identified some sources of inconsistency in the energy sector, where the information reported in the section on energy in the BUR (total emissions in 2018 of 2,407.76 Gg CO_2 eq in table 24 of the BUR) is not consistent with the information reported in the national summary of the sectoral emissions (total of 2,949.58 Gg CO_2 eq in table 155 of the BUR). During the technical analysis, the Party clarified that this inconsistency is related to the level of QA/QC performed and identified support for a rigorous QA/QC system as a capacity-building need.

36. The Bahamas reported information on its use of GWP values consistent with those provided by the IPCC in its AR5 based on the effects over a 100-year time-horizon of GHGs.

37. For the energy sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs and key categories, as well as other information specific to the sector. The Bahamas reported that most energy sector emissions stem from fuel combustion. The main sources of AD are listed as the CBB, the energy balance (2010–2012), power generators and fuel distributors. The Party explained that the energy balance data available for 2010–2012 are presented as fuel consumption by activity and map well with the IPCC source categories. These data were therefore important for identifying data gaps and assessing the accuracy of the main data sets, which came from the CBB.

38. For the IPPU sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs and key categories, as well as other information specific to the sector. The Party stated that emissions for IPPU categories, except for use of lubricants (category 2.D.1), were not estimated since there is no significant production of cement clinker, glass, ceramics or steel in the Bahamas. Data from the CBB identified the use of lubricants, which is the only source of emissions reported in the IPPU sector, with those emissions decreasing over time since 2001.

39. For 2006 IPCC Guidelines AFOLU categories 3.A and 3.C, the Bahamas estimated emissions from enteric fermentation (CH_4), manure management (CH_4, and direct and indirect N_2O), urea application (CO_2) and managed soils (direct and indirect N_2O). None of these sources of emissions under categories 3.A and 3.C were identified as key categories according to the BUR. Rice cultivation was reported as "NO". The Bahamas did not estimate emissions from liming in agricultural soils or biomass burning. The Party clarified in its BUR that emissions from liming were not included on the assumption that all national soils are calcareous; and that biomass burning was not estimated on the basis of expert judgment, as the burning of crop residues is not considered a common practice.

40. For land (category 3.B), the Bahamas reported annual GHG emissions and removals for 2001–2018, which includes the effect of two hurricanes in 2004. Overall, the net emissions from land (category 3.B) fluctuated between a minimum of 955.66 Gg CO_2 eq in 2005–2009 and a maximum of 3,042.80 Gg CO_2 eq in 2010–2014.

41. The TTE noted that post-hurricane forest carbon sequestration was clearly discernible in the time series (leading to very low net emissions in 2005–2010). However, the impact of the hurricanes on emissions was not discernible in 2004. The TTE therefore noted that the impact of the hurricanes on emissions was very small compared with the resulting removals (mostly from land converted to forest land). During the technical analysis, the Party clarified that the hurricanes triggered forest regeneration. The TTE noted that, according to the BUR, the impact of the hurricanes was severe. This means that reporting on the loss of carbon from

forest land over the time series and the subsequent removals would increase the accuracy and transparency of the reporting.

42. Information on some category-specific methods and assumptions used for estimating GHG emissions for category 3.B was not reported. For example, the TTE was unable to understand how the forest definition was applied consistently over time, how annual land use and land-use change estimates were derived from periodic maps, and how EFs were applied by subcategory. During the technical analysis, the Bahamas clarified that it used the definition of forest provided by the Food and Agriculture Organization of the United Nations: tree canopy cover of more than 10 per cent and area of more than 0.5 ha. The Party also clarified that annual land-use change estimates were derived by assuming a linear interpolation of five-year maps.

43. Information was not reported for some categories in the AFOLU sector, such as non-CO_2 emissions from forest fires. In the BUR, the Party explained that the exclusion of biomass burning was due to the unavailability of data. Additionally, the Party noted that CH_4 emissions from the drainage of organic soils do not occur. Further, dead organic matter and soil organic carbon were excluded from the reporting on the AFOLU sector.

44. The TTE noted that 25 per cent of the Party's territory (average across all maps) was not classified under a land use or land-use change category (table 78, p.231, of the BUR) owing to persistent cloud cover, cloud shadows or the absence of data. Further, in its BUR the Bahamas referred to missing data caused by scan-line errors made by the Landsat 7 sensor. Together, these issues have resulted in an incomplete representation of the Party's land, leading to an inconsistent estimation of the total area of the national territory over time. During the technical analysis, the Bahamas clarified that it is difficult to obtain cloud-free imagery for the Caribbean. The TTE acknowledges this difficulty, especially when building a time series from 2001. The TTE commends the Bahamas for its efforts and notes that gap-filling techniques may be useful to provide a more comprehensive representation of the Party's land, as well as using more recent high-resolution imagery available through the Google Earth Engine platform.

45. The Bahamas did not estimate emissions from HWP (category 3.D). The Party clarified in the BUR that determining the occurrence of emissions from HWP is among its areas for improvement of future reporting.

46. For the waste sector, information was clearly reported on GHG emissions, methodological tier levels, AD and their sources, EFs, key categories and notation keys used, as well as other information specific to the sector. The Party explained that GHG emissions in the waste sector typically come from the treatment of solid waste and the management of wastewater. The AD and EFs were obtained from sources such as population data, the statistical database of the Food and Agriculture Organization of the United Nations, a regional sanitation study (Pan American Health Organization, 2012) and 2006 IPCC Guidelines default data on waste generation and composition.

47. Information on inventories for previous submission years included in past NCs was not reported in the Bahamas' BUR. Emission estimates provided in the Bahamas' first BUR (for 2001–2018) are independent of and not consistent with the data presented in the NC1 and NC2. During the technical analysis, the Party clarified that no documents or archives have been preserved from the previous inventories to allow recalculation of the historical data sets. Further, the Party explained that the approach to data collection and archiving adopted for the NC3 and first BUR is different from and not compatible with the previously used approaches, as the current approach is being centralized and managed by the DEPP. The Party confirmed that this change in institutional arrangements is expected to be more sustainable and to reduce data losses. The Party further clarified that, for the latest inventory, information and data have been documented and archived, including backup copies.

48. The Bahamas described in its BUR the institutional framework for the preparation of its 2018 GHG inventory for the NC3 and first BUR. The Party reported that the DEPP, in the Ministry of the Environment and Natural Resources, is the governmental body responsible for overseeing and convening the NCCC and the Project Management Unit, which leads the compilation of the BUR. The NCCC Project Manager is a staff member of the CCEAU, which is a technical advisory arm of the Office of the Prime Minister. The NCCC is a

multidisciplinary and multisectoral body, which since February 2022 has included representatives of the Government and private and civil agencies with a view to enhancing the sustainability of data collection and archiving. This new institutional arrangement compared with that in place during the process of preparing the NC1 and NC2 is centralized, allows for better data collection and archiving, and involves more stakeholders.

49. The Bahamas clearly reported that a key category analysis was performed for the level of and the trend in emissions. Both the level and trend assessments were performed using approach 1 from the 2006 IPCC Guidelines. The key category analysis for the level of emissions showed that CO_2 emissions from land converted to grassland (category 3.B.3.b) was the main source of emissions in 2018, accounting for 35.8 per cent of total emissions. According to the key category analysis, this category was also the most important for the trend in emissions.

50. The BUR provides information on QA/QC measures undertaken by the Party when preparing the BUR. The Bahamas explained that QA steps were reviewed by GHG accounting experts at the CCMRV Hub. The checks cover the inventory information reported for each sector, documentation of the assumptions and criteria used for selecting AD and EFs, transcription errors in data input and references, calculations of emissions and removals, recording of parameters and emission and removal units and appropriate use of conversion factors, and completeness of estimates for all categories and for all years from the appropriate base year over the time series. In addition, the Party explained that, for the QC process, national sectoral experts are increasingly involved in data collection and checking sector-specific assumptions used for methods, while other line ministry representatives and experts from non-governmental organizations and academia are also available to provide a thorough review and assessment of the emission estimates. The TTE commends the Party for establishing a QA/QC system in order to enhance data quality and for identifying QA/QC as an area requiring further capacity-building.

51. The Bahamas reported information on CO_2 fuel combustion emissions using both the sectoral and the reference approach. The information reported indicates that both approaches provided similar estimates of emissions because the sectoral approach used overall fuel consumption data per fuel type as per the IPCC categories and was based on the information available. This meant that the reference approach and the sectoral approach were both based on the same total fuel consumption per fuel type and on the calculations used for the reference approach.

52. Information was clearly reported on international aviation and marine bunker fuels. The Bahamas classified emissions from international aviation and domestic aviation using data from the CBB, which lists the consumption of aviation gasoline and kerosene for domestic use.

53. Information on a quantitative uncertainty analysis was not reported in the Bahamas' BUR; the Party provided only qualitative information on uncertainty. During the technical analysis, the Party justified that this is its first BUR and acknowledged the special circumstances pertaining to it as a small island developing State. Further, the Party noted that this information was not provided because of capacity constraints. The Party identified capacity-building needs for estimating uncertainty, including for error propagation.

54. The TTE noted that the transparency of the information reported on GHG inventories could be further enhanced by addressing the areas noted in paragraphs 24, 28, 29, 31, 32, 33, 35, 41, 42, 44, 47 and 53 above, which could facilitate a better understanding of the information reported on GHG inventories.

55. The Bahamas reported in its BUR information on its areas for improvement for future reporting, classified by sector, for compliance with requirements under the ETF, such as enhancing the accuracy of data from the CBB, and receiving support for collecting non-reported information and disaggregating data and developing country-specific EFs. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

3. Mitigation actions and their effects, including associated methodologies and assumptions

56. As indicated in table I.2, the Bahamas reported in its BUR, mostly in accordance with paragraphs 11–13 of the UNFCCC reporting guidelines on BURs, information on mitigation actions and their effects, to the extent possible**.**

57. The information reported provides a clear and comprehensive overview of the Party's mitigation actions and their effects. In its BUR, the Bahamas reported information on its national context and framed its national mitigation planning and actions in the context of its national policies and its NDC. It reported that it continuously updates its policies, plans, strategies and initiatives for addressing climate change. The Party listed its significant mitigation-related national policies, which include the NEP 2013–2033, the Electricity Act (renewable energy) (amended 2015), the Forestry Act (amended 2014) and Forestry Regulations (2014). The NEP 2013–2033 includes a national target of achieving a minimum of 30 per cent renewables in the energy mix by 2030.

58. The Bahamas reported on 41 mitigation actions that are either ongoing or planned, while a few others are still at the idea stage or under preparation. Most of the mitigation actions are in the energy sector, which is the main source of emissions and emission reductions together with the AFOLU sector. The Bahamas reported that, if all the actions under its mitigation scenario are implemented, the annual GHG emission reduction is expected to be 1,125.9 Gg CO_2 eq by 2030, which corresponds to a 16 per cent reduction compared with 'business as usual'. If its ambitious mitigation scenario is implemented, the annual GHG emission reduction is expected to be 2,142.7 Gg CO_2 eq by 2030, which is equivalent to a 33 per cent reduction compared with 'business as usual'.

59. The Bahamas reported information on its NDC targets, which are aimed at achieving an economy-wide 30 per cent reduction in GHG emissions compared with 'business as usual' by 2030. The NDC also refers to achieving a minimum of 30 per cent renewables in the national energy mix by 2030 as per the NEP. The targets will also be achieved via the forestry sector through the establishment of a permanent forest estate under the Forestry Act. The reported targets are conditional upon access to the required technologies and finance, as well as on economic growth and socioeconomic progress. The TTE acknowledged the information, which is presented in this summary report as contextual without assessing the completeness and transparency of the information.

60. The Party reported a summary of its sectoral mitigation actions in tabular format in accordance with decision 2/CP.17, annex III, paragraph 11. The Party also reported information on its mitigation actions in narrative format.

61. Consistently with decision 2/CP.17, annex III, paragraph 12(a), the Bahamas clearly reported the names of mitigation actions or groups of actions, coverage (sector and gases) and progress indicators in the BUR (tables 92–132). A description of mitigation actions, as well as information on quantitative goals, was provided in the BUR for all sectors.

62. Information on the nature of the action to be implemented for enhancing the energy efficiency of air-conditioning systems (mitigation action 11) was not clearly reported in the Bahamas' BUR. The correlation between mitigation action 15 (174 MW solar photovoltaic systems) and mitigation action 18 (30 MW solar plant) was not clearly reported. In addition, the nature of the action to be implemented in order to achieve net zero emissions in the LULUCF sector by 2045 (mitigation action 39) was not clearly reported. During the technical analysis, the Party clarified that it will begin by using energy labelling to shift consumer trends towards more energy-efficient equipment, before introducing minimum energy performance standards. The Party also clarified that the 30 MW solar plant is included in the 174 MW, but that it was reported separately because it can be commissioned soon and is accordingly considered to be a 'quick win'. As for mitigation action 39, the Party clarified that it lacks capacity in the LULUCF sector to develop corresponding national mitigation plans.

63. The Bahamas reported information on methodologies and assumptions, the objectives of the actions and steps taken or envisaged to achieve the mitigation actions in the energy demand, electricity generation, transport, IPPU, agriculture, LULUCF and waste sectors.

64. The mitigation actions in the energy demand sector focus mainly on conducting energy audits of buildings and industrial facilities, retrofitting lighting in government buildings and street lighting, increasing adoption of solar water heaters, and developing energy labelling programmes and standards for appliances. Of the 13 reported actions, 7 were reported as ongoing and the remaining 6 as planned. The Party also reported the results of implementing its mitigation actions, as a mix of estimated outcomes and estimated emission reductions. Energy audits have already been implemented in some hotels. It is estimated that by 2030 total emission reductions of 74.6 Gg CO_2 eq can be achieved in hotels specifically by replacing diesel generators with solar photovoltaic systems. In addition, emission reductions of 61.3 Gg CO_2 eq can be achieved by implementing energy-efficiency measures in the industry sector. Lighting has already been retrofitted in some government buildings on the island of New Providence. This retrofitting work began in 2020 and emission reductions of 8.2 Gg CO_2 eq are expected by 2030. The retrofitting of street lighting is also ongoing and is expected to result in emission reductions of 18.5 Gg CO_2 eq by 2030. Planned mitigation actions include increasing the use of solar water heaters by 40 per cent compared with the current level of 5 per cent of water heaters being solar powered and developing energy-efficiency standards for air-conditioning systems, with the corresponding emission reductions amounting to 34.5 and 109.6 Gg CO_2 eq respectively by 2030.

65. The mitigation actions in the electricity generation sector focus mainly on generating renewable energy and providing related incentives, performing renewable energy assessments and improving the transmission and distribution network. Of the 14 reported actions, 6 were reported as planned, 5 as ongoing and 3 as newly proposed. The Party also reported the results of implementing its mitigation actions, as a mix of estimated outcomes and estimated emission reductions. The target of achieving a minimum of 30 per cent renewables in the energy mix by 2030 as per the NEP will be made possible by implementing projects on the country's major islands, namely New Providence, Grand Bahama and the Out Islands as a group. The projects include installing 174 MW solar photovoltaic systems, 15 MW waste-to-energy systems, 20 MW wind energy and 30 kW ocean energy. Sites have already been determined for a few of the projects. Another ongoing action to support the achievement of the target is the Renewable Energy Rider programme, which was introduced by the Grand Bahama Power Company and allows customers on the demand side to have grid-connected facilities with capacities of up to 150 kW wind or solar power. In addition, Bahamas Power and Light has established the Small-Scale Renewable Generation programme for grid-connected systems with capacity limits for residential and commercial customers. The estimated emission reductions from achieving the 30 per cent renewable energy target amount to 412.6 Gg CO_2 eq by 2030. The Bahamas is also planning to conduct upgrades to its transmission and distribution network to reduce electricity losses from 10 per cent in 2018 to 8 per cent by 2030. The estimated emission reductions from implementing this measure amount to 32.4 Gg CO_2 eq by 2030.

66. The mitigation actions in the transport sector focus mainly on electrifying the transport fleet and improving public transport and vehicle efficiency standards. Of the seven reported actions, four were reported as planned and the remaining three as ongoing. The Party also reported the results of implementing its mitigation actions, as a mix of estimated outcomes and estimated emission reductions. The Bahamas leased 12 electric vehicles in a pilot project launched in 2016. The Party is planning to assess the government fleet to identify which vehicles to replace with electric vehicles. One of its ongoing actions is to increase public awareness of electric vehicles and to develop incentives for driving them, with the aim of increasing sales to 35 per cent of total vehicle sales by 2030. This action is estimated to achieve emission reductions amounting to 1.1 Gg CO_2 eq by 2030. Another of the Party's planned actions is to promote the use of public transport by developing a comprehensive public transit strategy, training bus drivers in order to improve the service, providing incentives to the public to encourage them to use public transport and developing a public awareness campaign. The estimated emission reductions from implementing this action amount to 12.9 Gg CO_2 eq by 2030.

67. Since there are no industrial processes in the Bahamas that generate significant emissions, there is only one mitigation action in the IPPU sector. This action focuses on phasing down use of HFCs to ensure compliance with the Kigali Amendment and was reported as being under preparation. The Government of the Bahamas is preparing the

necessary instruments to implement this action, including capacity-building to assist with the use, storage, transportation and disposal of HFCs, strengthening the existing regulatory licensing systems, and providing a corresponding management system. The Party has estimated reaching a 20 per cent phase-down of HFC use by 2030 compared with its average HFC consumption over 2020–2022.

68. There is only one mitigation action in the agriculture sector, which is related to improving sequestration through sustainable agroforestry practices. This action was reported as an ongoing project funded by the GEF, whereby palm is being cultivated on Andros and Grand Bahama, and cascarilla is being cultivated sustainably on Acklins and Crooked Island. The Party reported that this action will increase sequestration potential but, owing to data constraints on the hectares of land to be converted and the sequestration potential, this mitigation action could not be modelled.

69. The mitigation actions in the LULUCF sector focus mainly on improving the sustainable management of existing and new forest reserves in addition to re-establishing and rehabilitating existing ecosystems. Of the three reported actions, two were reported as ongoing and one as newly proposed. The Party also reported the results of implementing its mitigation actions, as estimated emission reductions. The Bahamas is in the initial stages of establishing a permanent forest estate divided into conservation forests, forest reserves and protected forests across 283,750.18 ha on Abaco, Andros, Grand Bahama and New Providence by 2025. The successful implementation of this action is estimated to result in emission reductions of 381.15 Gg CO_2 eq by 2025. The other ongoing project is the re-establishment and rehabilitation of 50 ha of Davis Creek, Andros ecosystem, which is expected to result in emission reductions of 14.56 Gg CO_2 eq by 2025.

70. The mitigation actions in the waste sector focus mainly on improving waste management by implementing composting practices and recycling programmes. The two mitigation actions in the waste sector were reported as newly proposed. The Party reported the results of implementing its mitigation actions as estimated outcomes. In 2019 the Bahamas changed ownership of the New Providence sanitary landfill (comprising around 80 per cent of the total national amount of solid waste) from the Department of Environmental Health Services to the New Providence Ecology Park. In this sector, the Party plans to increase the share of waste directed to composting from 20 to 30 per cent by 2030 and to establish a recycling facility to sort and shred plastics, aluminium and cardboard.

71. Information on GHG emission reductions for some actions was not reported in the Bahamas' BUR. However, the Party provided relevant clarification in its BUR, namely that it encountered some challenges relating to data collection, especially for the IPPU, agriculture and waste sectors, which affected its ability to estimate GHG emission reduction potential. For the waste sector, the Party clarified that it is working on improving data collection.

72. Information on the progress of implementing the underlying steps taken or envisaged for mitigation actions 1–4 (energy audits, retrofitting of lighting and building codes), 6 (retrofitting of street lighting), 12 (promoting energy efficiency in water treatment plants), 13 (replacing diesel generators with solar photovoltaic plants in marine protected areas), 17 (Renewable Energy Rider programme), 20 (installing 10 MW distributed electricity generation on the Family Islands) and 23 (installing 10 MW distributed electricity generation in New Providence) was not reported in the Bahamas' BUR and the reason for this was not clear to the TTE. During the technical analysis, the Party clarified that the steps required for building codes have not yet been finalized as it is still conducting stakeholder discussions. The Party also clarified that actions 2–4 and 13 are still in the preparatory phase and that it faced challenges when attempting to collect data on some of the actions (e.g. actions 6, 12, 17, 20 and 23).

73. Information on assumptions used in relation to the mitigation actions in the electricity generation sector was not clearly reported in the Bahamas' BUR. For instance, the electricity grid EF and the grid transmission and distribution losses were not clearly reported, meaning that the estimated emission reductions for many of the mitigation actions were not clear. During the technical analysis, the Bahamas clarified that the grid EF was implicitly calculated by the LEAP model and that the transmission and distribution losses were assumed to be constant at 10 per cent from 2018 onward.

74. In addition, information on the exact adoption rate of solar water heaters (mitigation action 7) was not clearly reported, as two different values were entered for it in the corresponding reporting table. Moreover, the exact status of the 20 MW wind power plant was not clearly reported, as it was reported as an "idea" under mitigation action 19 and as "planned" under mitigation action 15. Finally, the progress of implementation of several actions was not clearly reported, such as the number of established or rehabilitated hectares for actions 37–38. During the technical analysis, the Bahamas clarified that, for mitigation action 7, the target adoption rate of solar water heaters is 40 per cent of all water heaters by 2030. As for the wind power plant, the Party clarified that, while the target to achieve a minimum of 30 per cent renewables in the energy mix by 2030 is clear, details on the exact capacities of the various technologies are yet to be defined. The 20 MW wind power plant was therefore reported to be an "idea" from a national expert. The Party also clarified that mitigation actions 37–38 were in their initial phases, which is why there was no information available to report.

75. The Bahamas documented that, despite being a Party to the Kyoto Protocol, it has no registered projects under the clean development mechanism or other international market mechanisms. The Bahamas reported its strong interest in participating in cooperative approaches and voluntary carbon markets under Article 6 of the Paris Agreement and is developing relevant institutional arrangements.

76. The Bahamas reported information on its domestic MRV arrangements in accordance with decision 2/CP.17, annex III, paragraph 13. The information reported indicates that the Bahamas is in the process of establishing a comprehensive domestic MRV system, including MRV of mitigation actions. The Party reported that its mitigation actions are developed and implemented by a range of stakeholders and government ministries. The process of measuring actions across the preparation, implementation and ongoing monitoring phases is yet to be formalized. At present, project-based MRV of mitigation actions is implemented on the basis of the requirements set by climate action funding sources. While strong emphasis is placed on prioritizing the assessment of loss and damage, comprehensive MRV components are yet to be established for this purpose.

77. The TTE noted that the transparency of the information reported on mitigation actions could be further enhanced by addressing the areas noted in paragraphs 62 and 72–74 above, which could facilitate a better understanding of the information reported on mitigation actions.

4. Constraints and gaps, and related technology, financial, technical and capacity-building needs, including a description of support needed and received

78. As indicated in table I.3, the Bahamas reported in its BUR, partially in accordance with paragraphs 14–16 of the UNFCCC reporting guidelines on BURs, information on finance, technology and capacity-building needs and support received.

79. The Bahamas clearly reported information on constraints and gaps, and related financial, technical and capacity-building needs in accordance with decision 2/CP.17, annex III, paragraph 14. In its BUR, the Bahamas identified its small size and limited human, technical and institutional capacity as constraints. It reported on constraints and gaps in relation to the GHG inventory, mitigation, adaptation and climate finance reporting, as well as on prioritized needs and improvements to facilitate future reporting. The Party reported that it has experienced data gaps and lack of availability of information. Barriers to implementing mitigation actions include lack of broad political support and effective planning, weak governance, the high capital investment required, limited access to climate finance grants and low-interest loans, the unsuitability of mitigation technologies to the national circumstances, limited land area, and natural disasters causing destruction to forested areas.

80. The Bahamas reported that its financial, technical and capacity-building needs are primarily in the areas of establishing the necessary arrangements and procedures for documenting and archiving the national GHG inventory, establishing and implementing QA/QC procedures, making arrangements for data sharing and collaboration, understanding the MRV process, improving the availability of data and data collection, mitigation

assessment and establishing a national inventory management system (including procedural and legal arrangements). The Party also reported on its key needs for improved modelling, such as improving data collection in the energy and LULUCF sectors, developing data sharing agreements (e.g. by anonymizing data) and continuously updating the LEAP model by monitoring the implementation of mitigation projects.

81. Information on specific and quantified financial needs was not reported in the Bahamas' BUR. However, the Party provided relevant clarification in its BUR, namely that support needed has yet to be assessed and quantified for prioritized needs.

82. The Bahamas reported information on financial resources, technology transfer, capacity-building and technical support received in accordance with decision 2/CP.17, annex III, paragraph 15. In its BUR, the Bahamas reported that it received USD 852,000 from the GEF, which included allocation for preparing both its first BUR and NC3. The information reported indicates that the Bahamas received capacity-building and technical support from the United Nations Environment Programme to commission experts to compile chapters of its first BUR and to facilitate its use of the 2006 IPCC Guidelines for preparing its GHG inventory, as well as in the fields of mitigation and MRV. Furthermore, the Bahamas received climate finance totalling approximately USD 155 million, of which USD 15 million (10 per cent) was allocated to adaptation and USD 140 million (90 per cent) to mitigation.

83. Information on technology transfer and capacity-building support received was not clearly reported in the Bahamas' BUR as it is not clear whether this support was reported together with the funding received. During the technical analysis, the Party clarified that the information was provided in an aggregated format in the BUR, and stated that more human, financial, institutional and technical support is needed to ensure improved reporting on a continuous basis.

84. Information on technical support received was also not clearly reported in the Bahamas' BUR. During the technical analysis, the Party clarified that individuals involved in GHG inventory preparation in the public and private sectors in the Bahamas were provided training through the CCMRV Hub on the GHG inventory system and the use of LEAP for mitigation assessment.

85. The Bahamas clearly reported information on nationally determined technology needs with regard to the development and transfer of technology in accordance with decision 2/CP.17, annex III, paragraph 16. In its BUR, the Bahamas reported that the technology needs assessment was the basis for the technology needs reported in the BUR. Stakeholders were engaged in prioritizing sectors to identify whether they should be included in the Party's technology action plan after completion of the technology needs assessment in 2023. During the technical analysis, the Party stated that the technology needs assessment has not yet resulted in any technology transfer to the Bahamas.

86. The TTE noted that the transparency of the information reported on needs and support received could be enhanced by addressing the areas noted in paragraphs 83–84 above, which could facilitate a better understanding of the information reported on needs and support received.

87. The Bahamas reported in its BUR information on its areas for improvement for future reporting and support needed for compliance with requirements under the ETF. Initiatives relate to the climate finance MRV system and improving transparency in reporting financial flows. The TTE commends the Party for the clear and comprehensive reporting on its proactive approach to preparing for ETF implementation.

5. Any other information

88. The Bahamas briefly reported some information on potential adaptation actions that are included in its NDC in sectors such as agriculture, tourism, health and water resource management. It highlighted that addressing loss and damage is a high priority in the country.

D. Identification of capacity-building needs

89. In consultation with the Bahamas, the TTE identified the following needs for capacity-building that could facilitate the preparation of subsequent reporting:

(a) Enhancing the technical capacity of the GHG inventory experts to use notation keys correctly and calculate the emissions currently not estimated;

(b) Building national capacity for planning and executing data collection and analysis to facilitate preparing the national GHG inventory;

(c) Enhancing national capacity for estimating and reporting CO, NO_X, NMVOC and sulfur dioxide emissions;

(d) Enhancing national capacity for estimating F-gases;

(e) Supporting the generation of GHG data over the time series, including by making recalculations if inconsistent methodologies or sources of AD or EFs were used;

(f) Enhancing QA/QC of the GHG inventory;

(g) Enhancing national capacity for performing uncertainty assessment;

(h) Enhancing national capacity for establishing consistent land representation across the inventory time series;

(i) Enhancing the capacity of the implementers of mitigation actions to develop monitoring plans for effectively tracking and reporting on their progress of implementation;

(j) Enhancing national capacity for preparing for reporting on mitigation actions under the ETF;

(k) Enhancing national capacity for developing and tracking national mitigation plans in the LULUCF sector;

(l) Enhancing national capacity for assessing and reporting needs for technology transfer, capacity-building and financial support in all areas of climate change;

(m) Enhancing national human, institutional and technical capacity for ensuring improved reporting on a continuous basis.

90. The TTE noted that, in addition to those identified during the technical analysis, the Bahamas reported several capacity-building needs in its first BUR covering the following areas:

(a) GHG inventory preparation;

(b) The national inventory management system;

(c) Data sharing and collaboration;

(d) The MRV process;

(e) Baseline and emission reduction projections;

(f) Tracking and reporting climate finance flows.

III. Conclusions

91. The TTE conducted a technical analysis of the information reported in the first BUR of the Bahamas in accordance with the UNFCCC reporting guidelines on BURs and concludes that the information reported is partially consistent. It provides an overview of national circumstances and institutional arrangements relevant to the preparation of NCs on a continuous basis; the national inventory of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol; mitigation actions and their effects, including associated methodologies and assumptions; constraints and gaps, and related financial, technical and capacity-building needs, including a description of support needed and received; the level of support received to enable the preparation and

submission of BURs; and domestic MRV. During the technical analysis, additional information was provided by the Bahamas on some category-specific methods and assumptions used for estimating GHG emissions. The Party also provided more detailed information on the mitigation actions to be implemented, the status of and assumptions used in relation to some mitigation actions, and the technical support received. The TTE concluded that the information analysed is partially transparent.

92. The Bahamas reported information on the institutional arrangements relevant to the preparation of its NCs and BURs on a continuous basis. The description covers key aspects of the institutional arrangements, including the roles and responsibilities of the overall coordinating entity and the involvement of other institutions and experts. The DEPP is the UNFCCC national focal point and together with the NCCC led the process of preparing the NC3 and first BUR. The Bahamas is making efforts to establish a sustainable MRV system. As part of the process of preparing the NC3 and first BUR, it has initiated a move from a project-based system to a centralized ongoing MRV system.

93. In its first BUR, submitted in 2022, the Bahamas reported information on its national GHG inventory for 2001–2018. This included GHG emissions and removals of CO_2, CH_4 and N_2O for most relevant sources and sinks. The inventory was developed on the basis of the 2006 IPCC Guidelines. The total GHG emissions for 2018 were reported as 6,268.10 Gg CO_2 eq (including land) and 3,276.04 Gg CO_2 eq (excluding land). A total of 13 key categories and main gases were identified. Estimates of F-gases were not provided owing to difficulties in obtaining the necessary data, as clarified by the Party during the technical analysis and in the BUR.

94. The Bahamas reported information on mitigation actions and their effects in both tabular and narrative format and framed its national mitigation planning and actions in the context of its NDC and national policies, which include the NEP 2013–2033, the Forestry Act (amended 2014) and Forestry Regulations (2014). The Bahamas reported planned and ongoing actions, as well as actions under preparation, in the energy demand, electricity generation, transport, IPPU, agriculture, LULUCF and waste sectors. The mitigation actions are focused on achieving a minimum of 30 per cent renewables in the energy mix, conducting energy audits in buildings and industrial facilities, developing energy labelling programmes and standards for appliances, electrifying the transport fleet, and improving sequestration through sustainable agroforestry practices, as well as improving the sustainable management of existing and new forest reserves. The Party reported the progress of implementation of its mitigation actions and the results achieved, including emission reductions and estimated outcomes. The highest estimated emission reduction was reported for the electricity generation sector. The Party reported a net zero target for the LULUCF sector for 2045; however, the exact actions for achieving this were not clearly reported, as they have not yet been assessed. Estimates of emission reductions for some actions, and the progress of steps taken or envisaged for others, were not provided owing to difficulties in obtaining the necessary data and capacity constraints as reported by the Party in the BUR and clarified during the technical analysis.

95. The Bahamas reported information on key constraints, gaps and related needs across all areas of technology transfer, capacity-building and financial support. Information was partially reported on technical, technology transfer and capacity-building support received, including financial support received from various sources and technical support received for preparing its first BUR. The Party also reported that it received approximately USD 852,000 from the GEF for preparing its first BUR and NC3. The Party did not clearly report information on technology transfer in a transparent format. Also, information on financial support needed was not reported, as the Party still needs to assess and quantify the needs for technology transfer, capacity-building and financial support.

96. The TTE, in consultation with the Bahamas, identified the 13 capacity-building needs listed in chapter II.D above that aim to facilitate reporting in accordance with the UNFCCC reporting guidelines on BURs and participation in ICA in accordance with the ICA modalities and guidelines, taking into account Article 4, paragraph 3, of the Convention. The Bahamas prioritized all the capacity-building needs listed in paragraph 89 above.

Annex I

Extent of the information reported by the Bahamas in its first biennial update report

Table I.1
Identification of the extent to which the elements of information on greenhouse gases are included in the first biennial update report of the Bahamas

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 2/CP.17, paragraph 41(g)	The first BUR shall cover, at a minimum, the inventory for the calendar year no more than four years prior to the date of the submission, or more recent years if information is available, and subsequent BURs shall cover a calendar year that does not precede the submission date by more than four years.	Yes	The Bahamas submitted its first BUR in December 2022; the GHG inventory reported is for 2001–2018.
Decision 2/CP.17, annex III, paragraph 4	Non-Annex I Parties should use the methodologies established in the latest UNFCCC guidelines for the preparation of NCs from non-Annex I Parties approved by the Conference of the Parties or those determined by any future decision of the Conference of the Parties on this matter.	Yes	The Bahamas used the 2006 IPCC Guidelines.
Decision 2/CP.17, annex III, paragraph 5	The updates of the section on national inventories of anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol should contain updated data on activity levels based on the best information available using the Revised 1996 IPCC Guidelines, the IPCC good practice guidance and the IPCC good practice guidance for LULUCF; any change to the EF may be made in the subsequent full NC.	Yes	
Decision 2/CP.17, annex III, paragraph 6	Non-Annex I Parties are encouraged to include, as appropriate and to the extent that capacities permit, in the inventory section of the BUR:		
	(a) The tables included in annex 3A.2 to the IPCC good practice guidance for LULUCF;	No	Comparable information was not reported.
	(b) The sectoral report tables annexed to the Revised 1996 IPCC Guidelines.	Partly	The information reported is not fully comparable, as emissions and removals were not reported separately.
Decision 2/CP.17, annex III, paragraph 7	Each non-Annex I Party is encouraged to provide a consistent time series back to the years reported in its previous NCs.	No	The time series reported in the BUR does not include 1994–2000.
Decision 2/CP.17, annex III, paragraph 8	Non-Annex I Parties that have previously reported on their national GHG inventories contained in their NCs are encouraged to submit summary information tables of inventories for previous submission years (e.g. for 1994 and 2000).	No	This information was not reported for 1994 or 2000.
Decision 2/CP.17, annex III, paragraph 9	The inventory section of the BUR should consist of an NIR as a summary or as an update of the information contained in decision 17/CP.8,		

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
	annex, chapter III (National greenhouse gas inventories), including:		
	(a) Table 1 (National greenhouse gas inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol and greenhouse gas precursors);	Yes	Comparable information was reported in table 155 of the BUR.
	(b) Table 2 (National greenhouse gas inventory of anthropogenic emissions of HFCs, PFCs and SF_6).	No	Comparable information was not reported.
Decision 2/CP.17, annex III, paragraph 10	Additional or supporting information, including sector-specific information, may be supplied in a technical annex.	NA	
Decision 17/CP.8, annex, paragraph 12	Non-Annex I Parties are also encouraged, to the extent possible, to undertake any key source analysis as indicated in the IPCC good practice guidance to assist in developing inventories that better reflect their national circumstances.	Yes	
Decision 17/CP.8, annex, paragraph 13	Non-Annex I Parties are encouraged to describe procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including information on the role of the institutions involved.	Yes	
Decision 17/CP.8, annex, paragraph 14	Each non-Annex I Party shall, as appropriate and to the extent possible, provide in its national inventory, on a gas-by-gas basis and in units of mass, estimates of anthropogenic emissions of:		
	(a) CO_2;	Partly	Emissions for IPPU categories, except for use of lubricants (category 2.D.1), were not estimated.
	(b) CH_4;	Partly	Biomass burning was not estimated. According to the Party, organic soils are not drained.
	(c) N_2O.	Partly	Biomass burning was not estimated.
Decision 17/CP.8, annex, paragraph 15	Non-Annex I Parties are encouraged, as appropriate, to provide information on anthropogenic emissions by sources of:		
	(a) HFCs;	No	
	(b) PFCs;	No	
	(c) SF_6.	No	
Decision 17/CP.8, annex, paragraph 16	Non-Annex I Parties are encouraged, as appropriate, to report on anthropogenic emissions by sources of other GHGs, such as:		
	(a) CO;	No	
	(b) NO_X;	No	
	(c) NMVOCs.	No	

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 17/CP.8, annex, paragraph 17	Other gases not controlled by the Montreal Protocol, such as sulfur oxides, and included in the Revised 1996 IPCC Guidelines may be included at the discretion of Parties.	No	
Decision 17/CP.8, annex, paragraph 18	Non-Annex I Parties are encouraged, to the extent possible, and if disaggregated data are available, to estimate and report CO_2 fuel combustion emissions using both the sectoral and the reference approach and to explain any large differences between the two approaches.	Yes	
Decision 17/CP.8, annex, paragraph 19	Non-Annex I Parties should, to the extent possible, and if disaggregated data are available, report emissions from international aviation and marine bunker fuels separately in their inventories:		
	(a) International aviation;	Yes	
	(b) Marine bunker fuels.	Yes	
Decision 17/CP.8, annex, paragraph 20	Non-Annex I Parties wishing to report on aggregated GHG emissions and removals expressed in CO_2 eq should use the GWP provided by the IPCC in its AR2 based on the effects of GHGs over a 100-year time-horizon.	NA	The Party used the GWP provided in the AR5.
Decision 17/CP.8, annex, paragraph 21	Non-Annex I Parties are encouraged to provide information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol, including a brief explanation of the sources of EFs and AD. If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe the source and/or sink categories, methodologies, EFs and AD used in their estimation of emissions, as appropriate. Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building:		
	(a) Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of GHGs not controlled by the Montreal Protocol;	Yes	The Bahamas used the 2006 IPCC Guidelines. Tier 1 methodology was used for all sectors.
	(b) Explanation of the sources of EFs;	Yes	
	(c) Explanation of the sources of AD;	Yes	
	(d) If non-Annex I Parties estimate anthropogenic emissions and removals from country-specific sources and/or sinks that are not part of the Revised 1996 IPCC Guidelines, they should explicitly describe:	NA	
	(i) Source and/or sink categories;		
	(ii) Methodologies;		
	(iii) EFs;		

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
	(iv) AD;		
	(e) Parties are encouraged to identify areas where data may be further improved in future communications through capacity-building.	Yes	
Decision 17/CP.8, annex, paragraph 22	Each non-Annex I Party is encouraged to use tables 1–2 of the guidelines annexed to decision 17/CP.8 in reporting its national GHG inventory, taking into account the provisions established in paragraphs 14–17. In preparing those tables, Parties should strive to present information that is as complete as possible. Where numerical data are not provided, Parties should use the notation keys as indicated.	Yes	
Decision 17/CP.8, annex, paragraph 24	Non-Annex I Parties are encouraged to provide information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties:		
	(a) Level of uncertainty associated with inventory data;	No	
	(b) Underlying assumptions;	Yes	
	(c) Methodologies used, if any, for estimating these uncertainties.	No	

Note: The parts of the UNFCCC reporting guidelines on BURs on reporting information on GHG emissions by sources and removals by sinks in BURs are contained in decision 2/CP.17, paras. 3–10 and 41(g). Further, as per para. 3 of those guidelines, non-Annex I Parties are to submit updates of their national GHG inventories in accordance with paras. 8–24 of the UNFCCC guidelines for the preparation of NCs from non-Annex I Parties, contained in the annex to decision 17/CP.8. The scope of such updates should be consistent with the non-Annex I Party's capacity and time constraints and the availability of its data, as well as the level of support provided by developed country Parties for biennial update reporting.

Table I.2
Identification of the extent to which the elements of information on mitigation actions are included in the first biennial update report of the Bahamas

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 11	Non-Annex I Parties should provide information, in tabular format, on actions to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all GHGs not controlled by the Montreal Protocol.	Yes	The Party provided information in tabular and narrative formats.
Decision 2/CP.17, annex III, paragraph 12	For each mitigation action or group of mitigation actions, including, as appropriate, those listed in document FCCC/AWGLCA/2011/INF.1, developing country Parties shall provide the following information, to the extent possible:		
	(a) Name and description of the mitigation action, including information on the nature of the action, coverage (i.e. sectors and gases), quantitative goals and progress indicators;	Yes	Information on quantitative goals and progress indicators was reported for all mitigation actions.
	(b) Information on:		
	(i) Methodologies;	Yes	

Decision	*Provision of the reporting guidelines*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
	(ii) Assumptions;	Yes	
	(c) Information on:		
	(i) Objectives of the action;	Yes	
	(ii) Steps taken or envisaged to achieve that action;	Yes	
	(d) Information on:		
	(i) Progress of implementation of the mitigation actions;	Yes	
	(ii) Progress of implementation of the underlying steps taken or envisaged;	Partly	The Party did not report on the progress of the steps taken or envisaged for some mitigation actions.
	(iii) Results achieved, such as estimated outcomes (metrics depending on type of action) and estimated emission reductions, to the extent possible;	Partly	The Party reported on emission reductions for most of the mitigation actions in the energy and forestry sectors but did not report on emission reductions for all the mitigation actions in the IPPU, agriculture and waste sectors.
	(e) Information on international market mechanisms.	Yes	
Decision 2/CP.17, annex III, paragraph 13	Parties should provide information on domestic MRV arrangements.	Yes	

Note: The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on mitigation actions in BURs are contained in decision 2/CP.17, annex III, paras. 11–13.

Table I.3
Identification of the extent to which the elements of information on finance, technology and capacity-building needs and support received are included in the first biennial update report of the Bahamas

Decision	*Provision of the reporting requirements*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
Decision 2/CP.17, annex III, paragraph 14	Non-Annex I Parties should provide updated information on:		
	(a) Constraints and gaps;	Yes	
	(b) Related financial, technical and capacity-building needs.	Partly	Information on financial needs was not reported.
Decision 2/CP.17, annex III, paragraph 15	Non-Annex I Parties should provide:		
	(a) Information on financial resources received, technology transfer and capacity-building received;	Partly	Information on whether the funding received also included technology transfer and capacity-building support was not reported.
	(b) Information on technical support received from the GEF, Parties included in Annex II to the Convention and other developed country Parties, the Green Climate Fund and multilateral institutions for	Partly	Information on technical support received was not reported in the respective section.

Decision	*Provision of the reporting requirements*	*Assessment of whether the information was reported*	*Comments on the extent of the information provided*
	activities relating to climate change, including for the preparation of the current BUR.		
Decision 2/CP.17, annex III, paragraph 16	With regard to the development and transfer of technology, non-Annex I Parties should provide information on:		
	(a) Nationally determined technology needs;	Yes	
	(b) Technology support received.	Partly	Information on whether the funding received also included technology support was not reported.

Note: The parts of the UNFCCC reporting guidelines on BURs on the reporting of information on finance, technology and capacity-building needs and support received in BURs are contained in decision 2/CP.17, annex III, paras. 14–16.

Annex II

Reference documents

A. Reports of the Intergovernmental Panel on Climate Change

IPCC. 1997. *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*. JL Houghton, LG Meira Filho, B Lim, et al. (eds.). Paris: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency. Available at https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html.

IPCC. 2000. *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. J Penman, D Kruger, I Galbally, et al. (eds.). Hayama, Japan: IPCC/Organisation for Economic Co-operation and Development/International Energy Agency/Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gp/english/.

IPCC. 2003. *Good Practice Guidance for Land Use, Land-Use Change and Forestry*. J Penman, M Gytarsky, T Hiraishi, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html.

IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl.

B. UNFCCC documents

First BUR of the Bahamas. Available at https://unfccc.int/BURs.

NC1, NC2 and NC3 of the Bahamas. Available at https://unfccc.int/non-annex-I-NCs.

C. Other documents

The following references may not conform to UNFCCC editorial style as some have been reproduced as received:

FAO. 2000. *On definitions of forest and forest change. Forest Resources Assessment Programme*, Working Paper 33. Retrieved from http://www.fao.org/forestry/fo/fra/index.jsp.

Pan American Health Organization. (2012). *Health in the Americas: 2012 Edition. Regional Outlook and Country Profiles*. Washington, DC: PAHO.